

MSSS Update

Roberto Pizzo
(on behalf of the MSSS team)
M 22 August 2012



Welcome

This site marshalls information about interferometric data which has been recorded by [LOFAR](#). Primarily, it aims to support the ongoing [MSSS](#) ("Multifrequency Snapshot Sky Survey") commissioning effort.

Use the links below to get started.

Surveys

Data on the following surveys is available:

- [MSSS LBA](#)
- [MSSS HBA](#)

Fields

4285 fields are being tracked.

[View details »](#)

Observations

6138 separate observations are known.

[View details »](#)

Or, jump straight to your data:

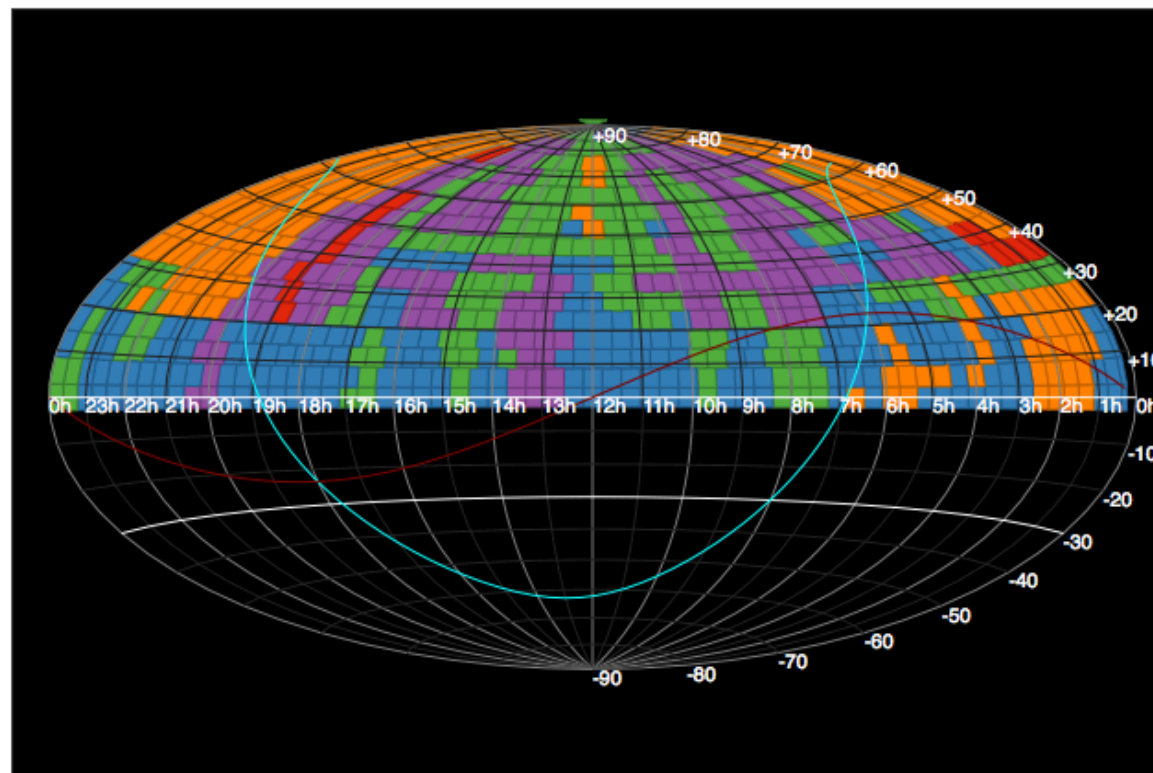
Field

Observation

MSSS LBA

Multifrequency Snapshot Sky
Survey: Low Band

# Targets	661
# Calibrators	8
Start Date	4 Nov. 2011
Stop Date	16 April 2012
Completed Fields	308 (46.6%)

[Show me the data »](#)

Hammer Projection

Map based on code from [this project](#).

Data available on CEP

Data archived

Partial data available

Data missing

Not yet observed

A field is regarded as complete if all the subbands of at least 9 observations of the field are available on CEP and/or in the archive. Otherwise, it is marked as "partially available".

For those fields where a complete data set is available both in CEP and in the archive, the above map gives priority to the former.

669 fields

Refine the selection here. Positions can be entered in decimal degrees, sexagesimal degrees (format +/-NNdNNmNN.nns) or times (NNhNNmNN.nns); the search radius is in decimal degrees.

Right Ascension

Declination

Search Radius

Survey

Status

Sort By

Reverse ☐

Apply Filter

Clear Filter

1

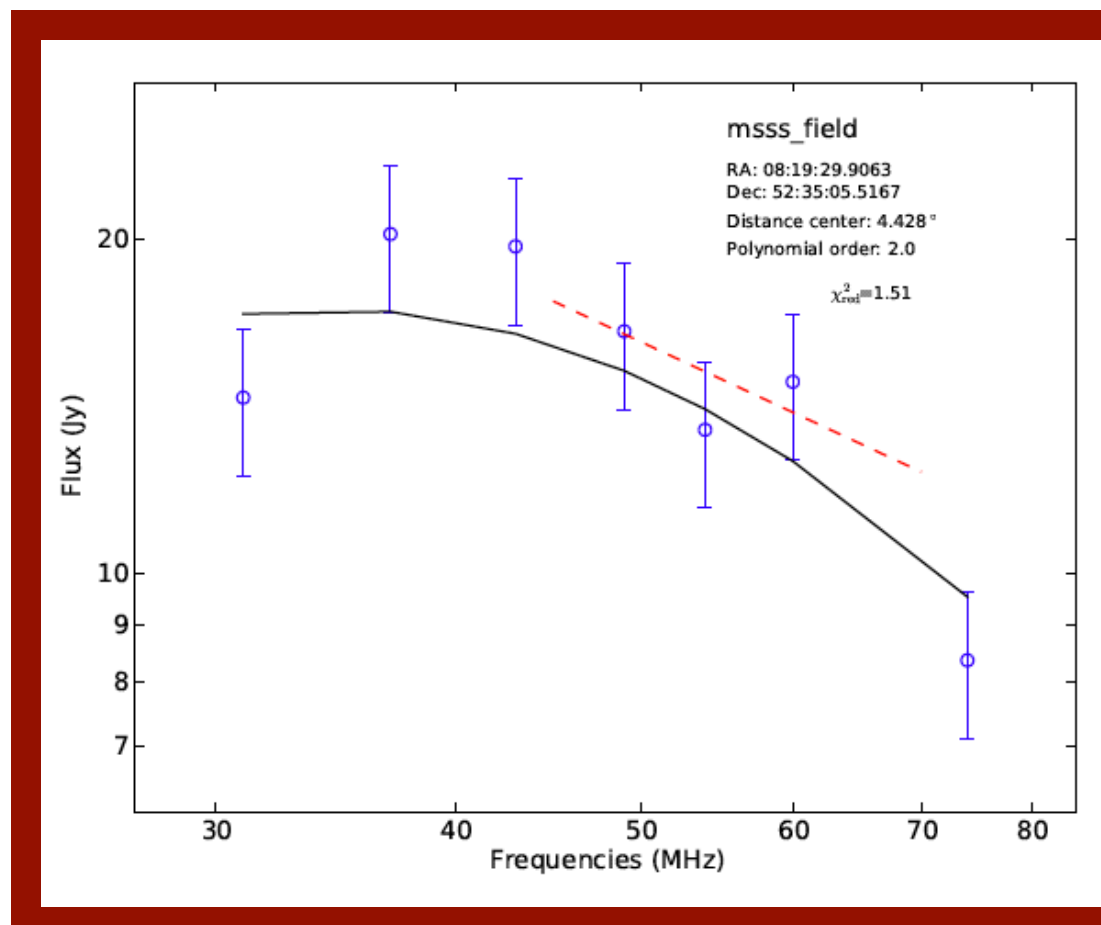
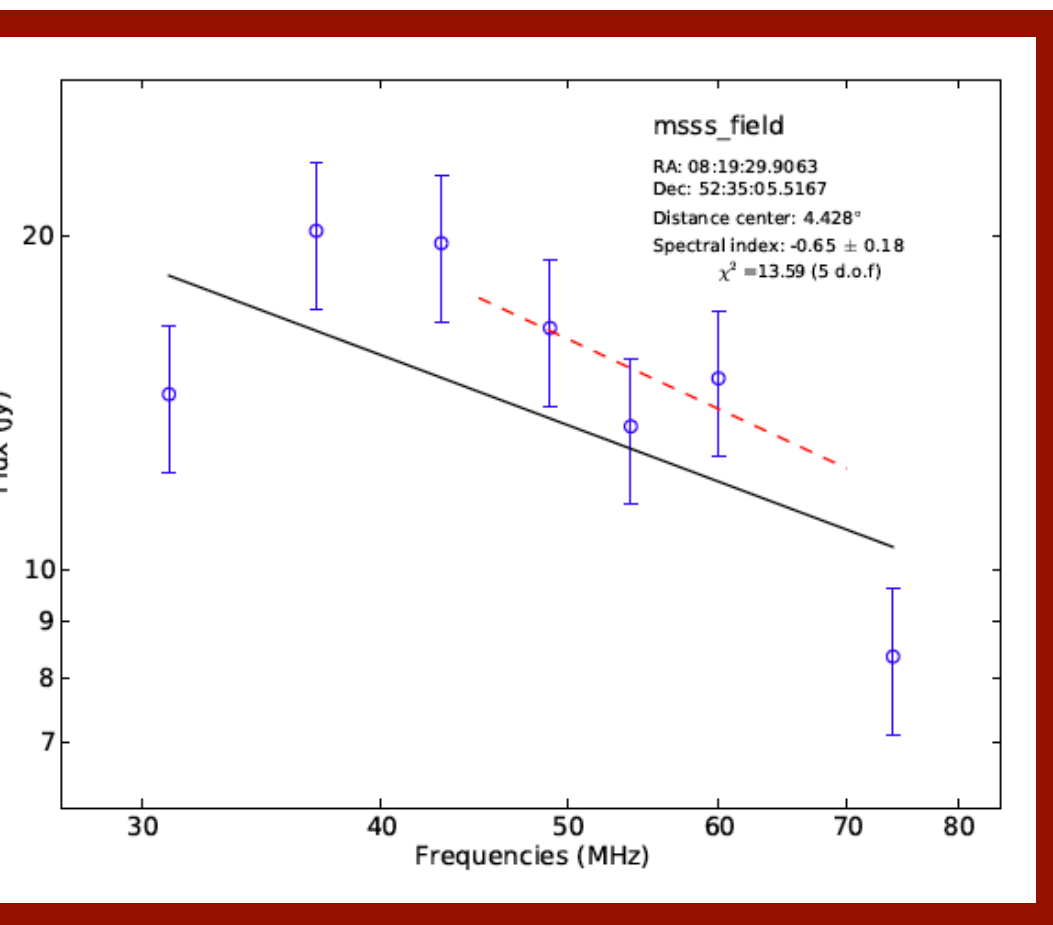
2

...

7

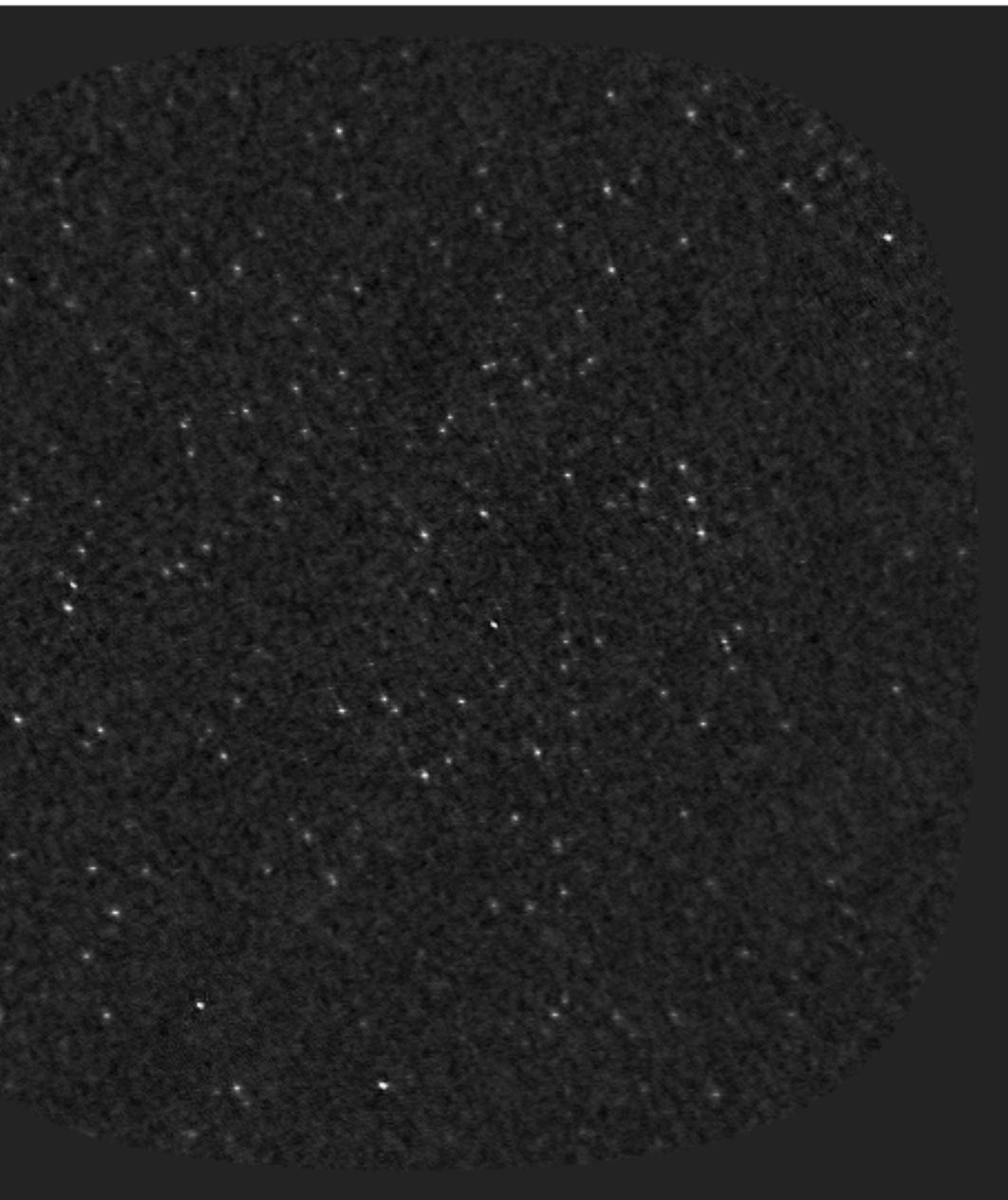
Name	RA	Dec	Distance	Survey	# Observations	Status
3C147	5 ^h 42 ^m 36.1 ^s	+49° 51' 7.0"	-	MSSS LBA	288	
3C196	8 ^h 13 ^m 36.0 ^s	+48° 13' 3.0"	-	MSSS LBA	1890	
3C286	13 ^h 31 ^m 8.3 ^s	+30° 30' 33.0"	-	MSSS LBA	0	
3C287	13 ^h 30 ^m 37.7 ^s	+25° 9' 11.0"	-	MSSS LBA	0	
3C295	14 ^h 11 ^m 20.5 ^s	+52° 12' 10.0"	-	MSSS LBA	2034	
3C380	18 ^h 29 ^m 31.8 ^s	+48° 44' 46.0"	-	MSSS LBA	0	
3C48	1 ^h 37 ^m 41.3 ^s	+33° 9' 35.0"	-	MSSS LBA	450	
CygA	19 ^h 59 ^m 28.4 ^s	+40° 44' 2.1"	-	MSSS LBA	1152	
L003+00	0 ^h 11 ^m 25.7 ^s	+0° 0' 0.0"	-	MSSS LBA	9	
L003+06	0 ^h 11 ^m 25.7 ^s	+5° 46' 12.0"	-	MSSS LBA	9	
L003+12	0 ^h 11 ^m 36.8 ^s	+11° 32' 24.0"	-	MSSS LBA	9	
L003+17	0 ^h 12 ^m 0.0 ^s	+17° 18' 36.0"	-	MSSS LBA	9	
L003+23	0 ^h 12 ^m 24.8 ^s	+23° 4' 48.0"	-	MSSS LBA	0	
L003+29	0 ^h 13 ^m 5.5 ^s	+28° 50' 60.0"	-	MSSS LBA	9	
L003+35	0 ^h 13 ^m 50.8 ^s	+34° 37' 12.0"	-	MSSS LBA	18	
L004+40	0 ^h 15 ^m 0.0 ^s	+40° 23' 24.0"	-	MSSS LBA	0	
L004+46	0 ^h 16 ^m 21.8 ^s	+46° 9' 36.0"	-	MSSS LBA	0	
L005+52	0 ^h 18 ^m 27.7 ^s	+51° 55' 48.0"	-	MSSS LBA	0	
L005+58	0 ^h 21 ^m 10.6 ^s	+57° 42' 0.0"	-	MSSS LBA	0	
L006+63	0 ^h 25 ^m 42.9 ^s	+63° 28' 12.0"	-	MSSS LBA	0	
L008+69	0 ^h 31 ^m 18.3 ^s	+69° 14' 24.0"	-	MSSS LBA	0	
L009+00	0 ^h 34 ^m 17.1 ^s	+0° 0' 0.0"	-	MSSS LBA	9	
L009+06	0 ^h 34 ^m 17.1 ^s	+5° 46' 12.0"	-	MSSS LBA	9	
L009+12	0 ^h 34 ^m 50.3 ^s	+11° 32' 24.0"	-	MSSS LBA	9	

incorporate the same kind of spectral fitting of the calibration
 into the MSSS analysis script `MSSS_field_analyzer.py` with
 an automatic routine for determining the best polynomial order

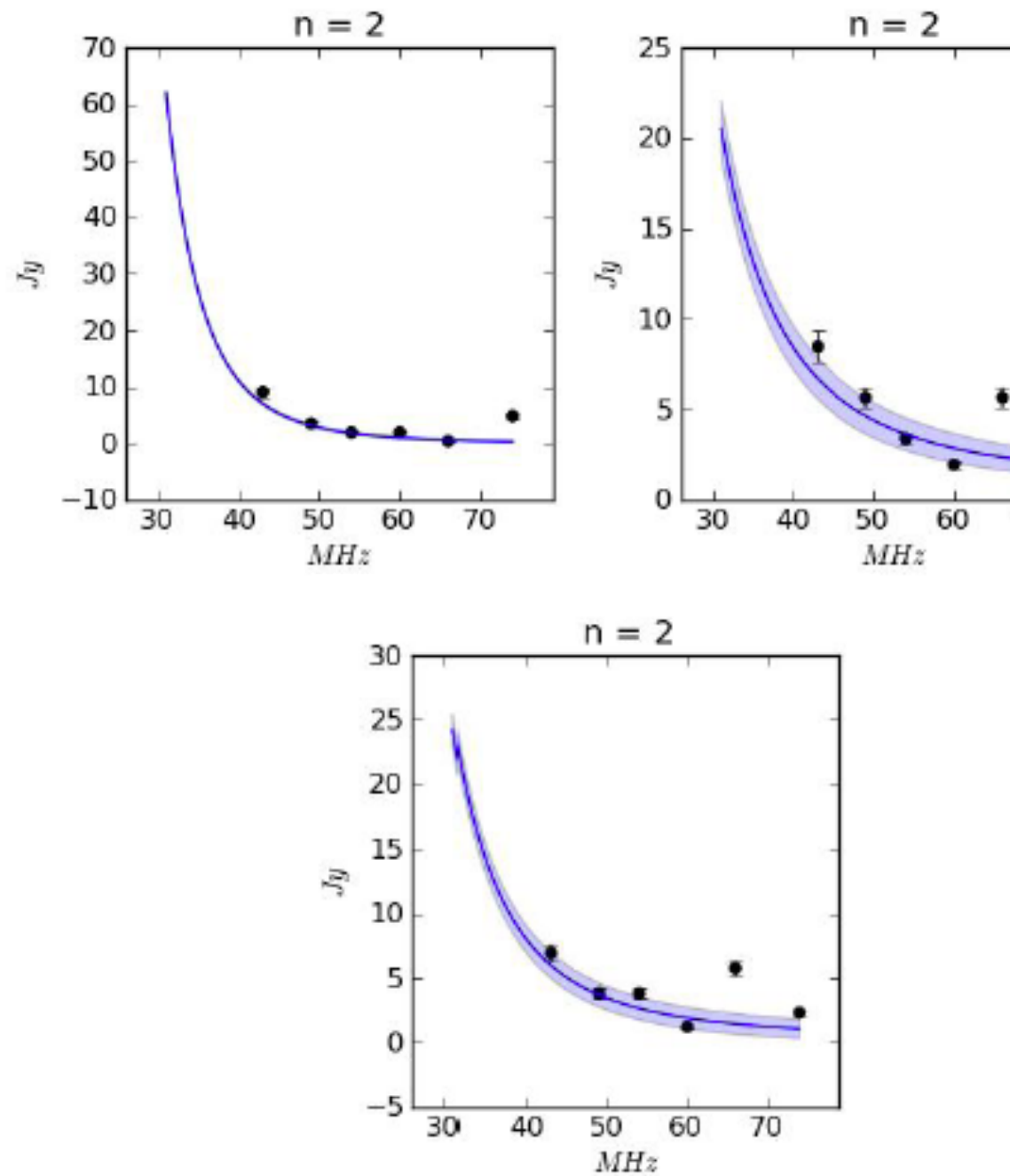


A. Scaife

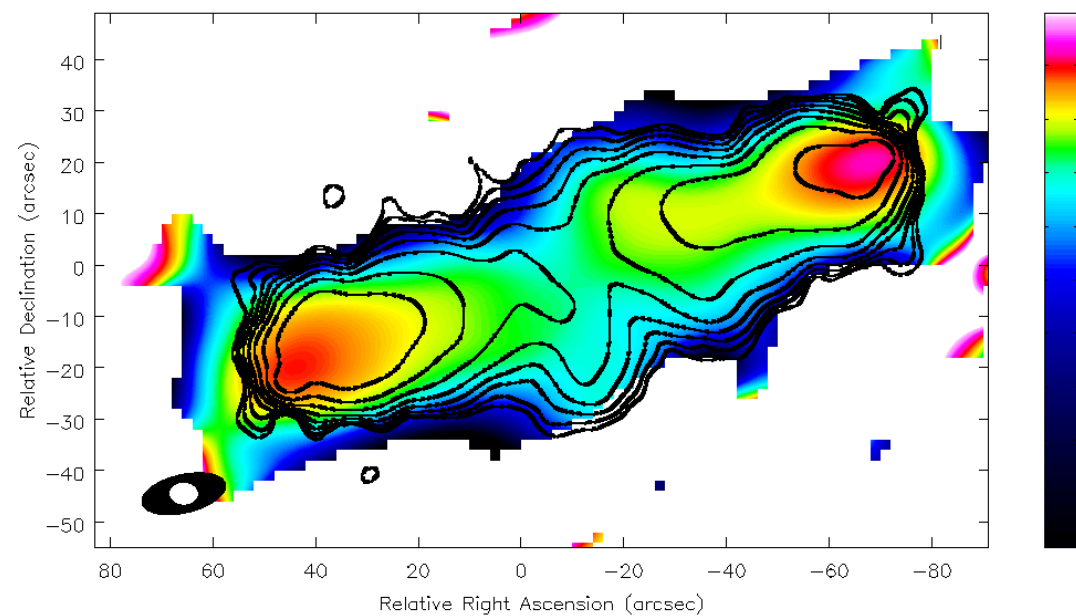
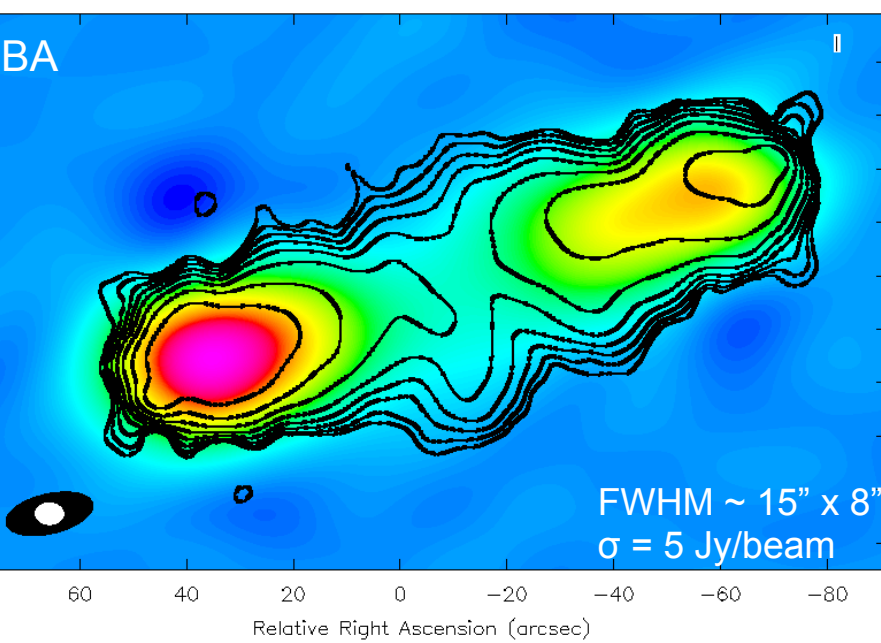
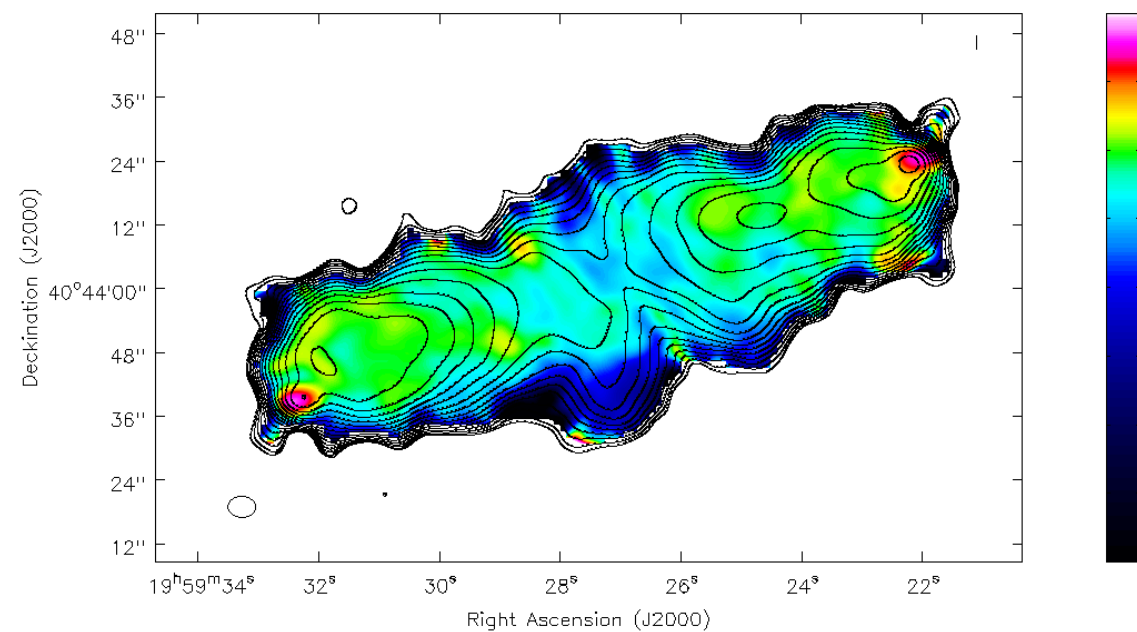
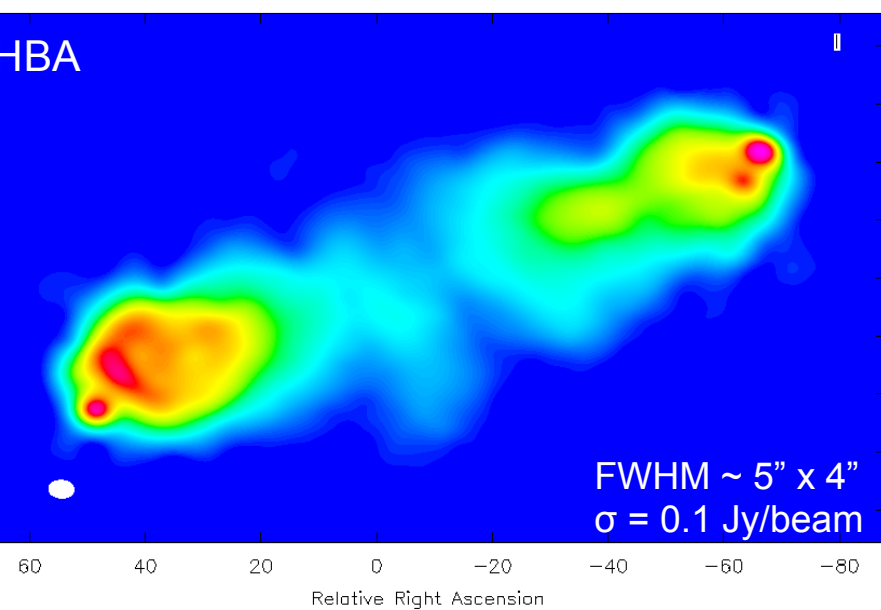
real data, it checks how many detections there are across the
 frequency range (e.g. 30-70 MHz) and then uses the following

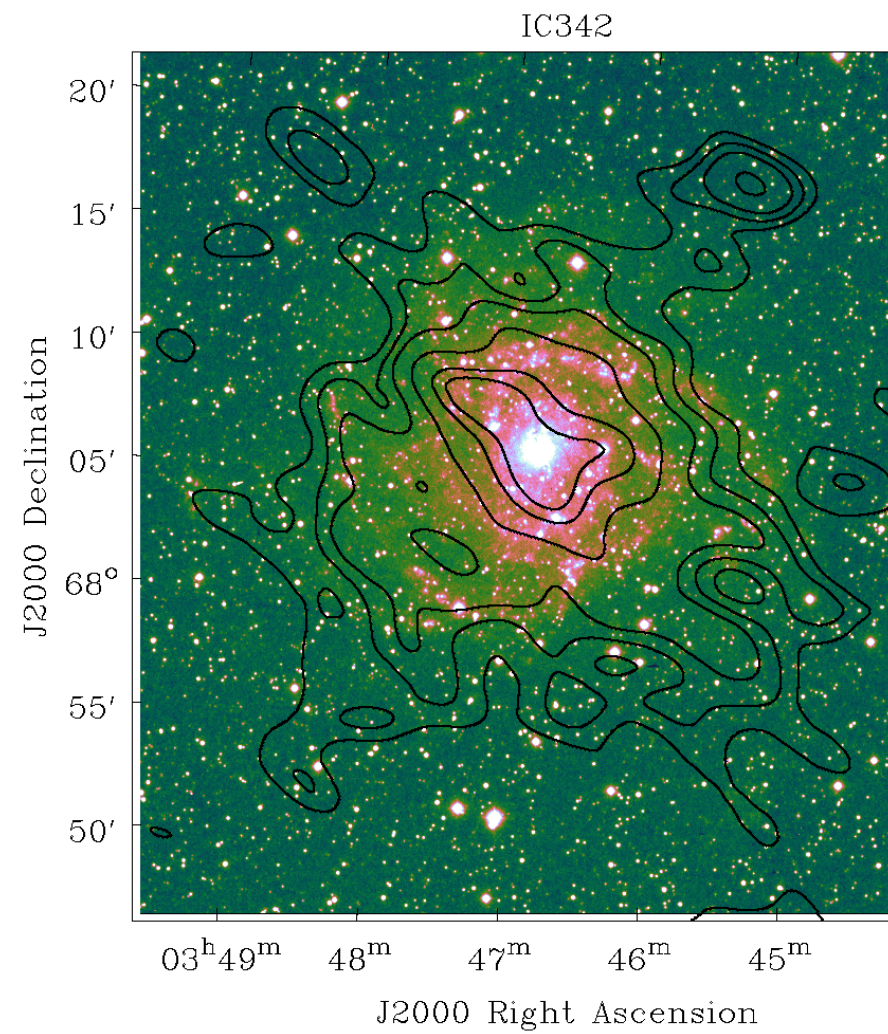
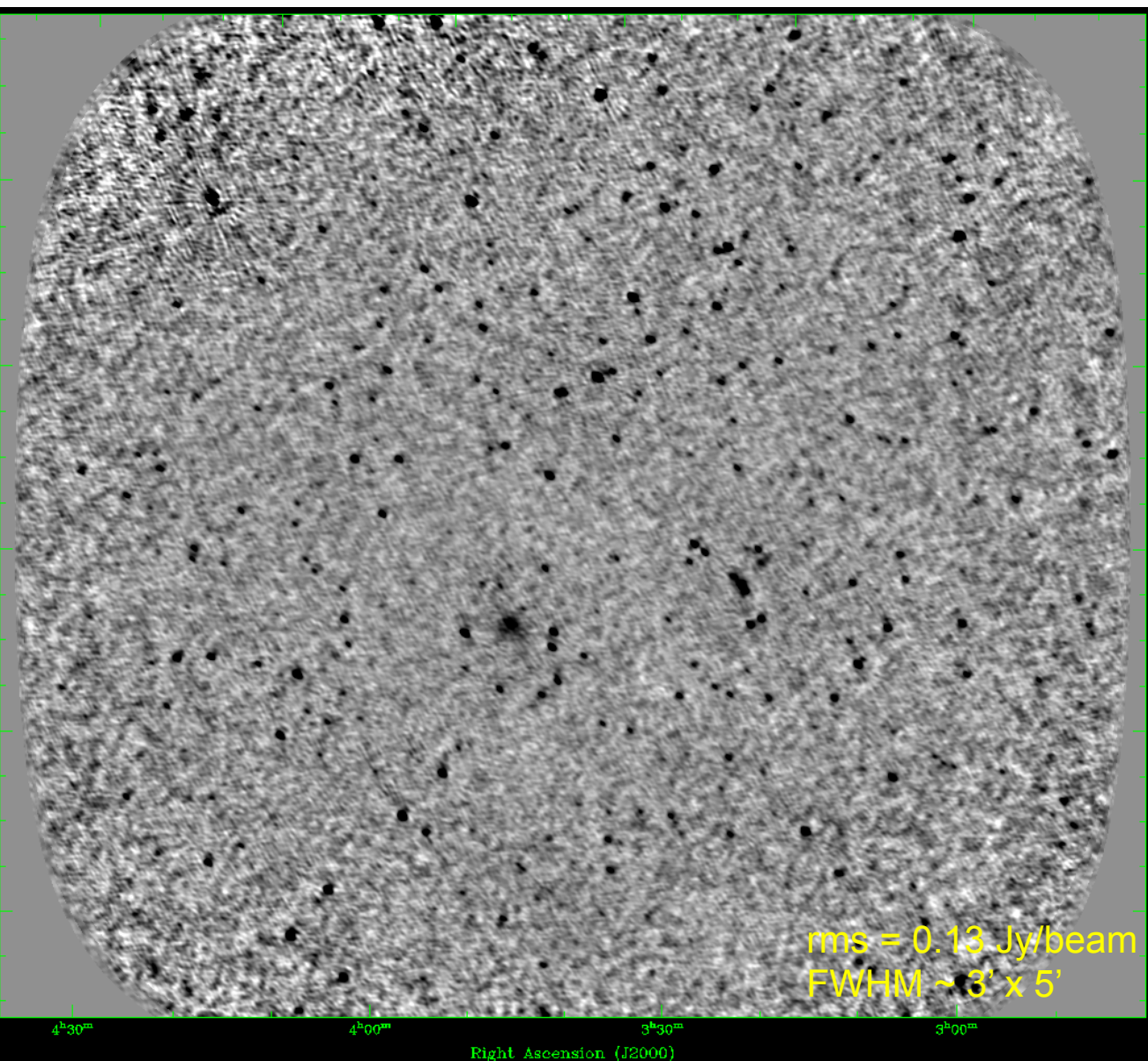


Patricia Carroll



sources detected; 13.5% are best fit with $n > 1$ polynomial





David Mul

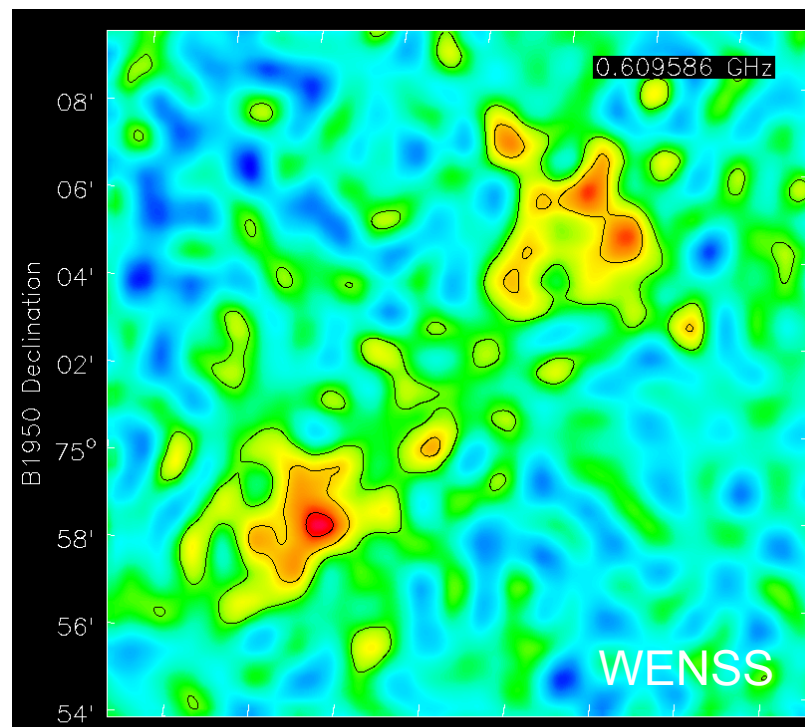
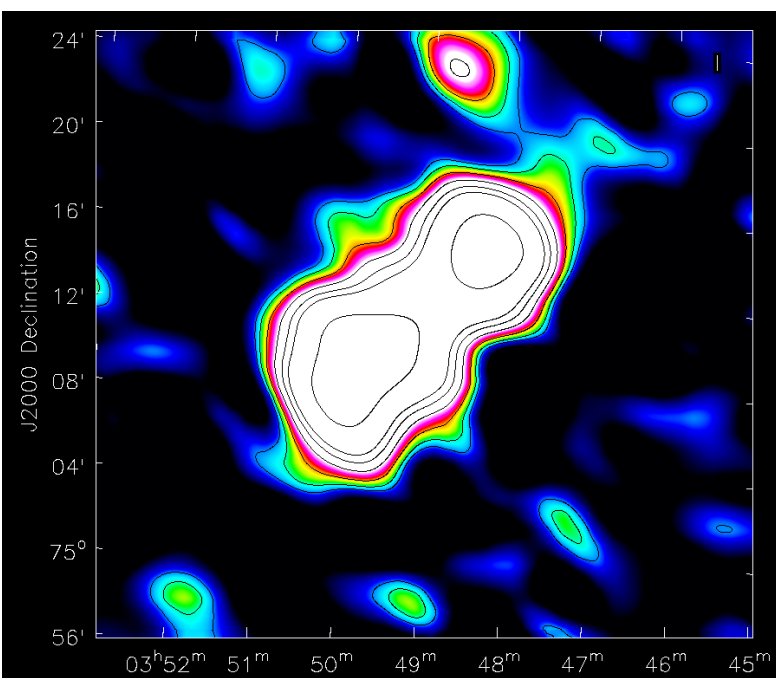
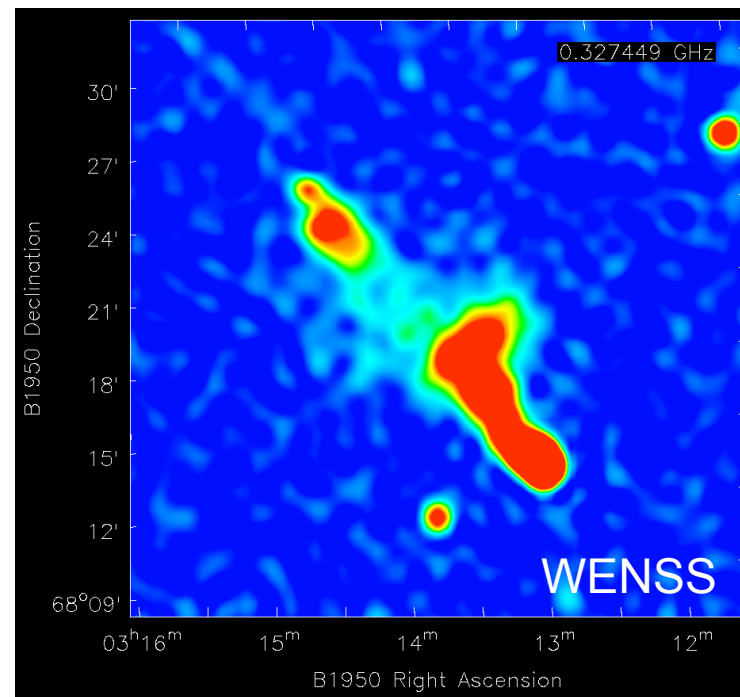
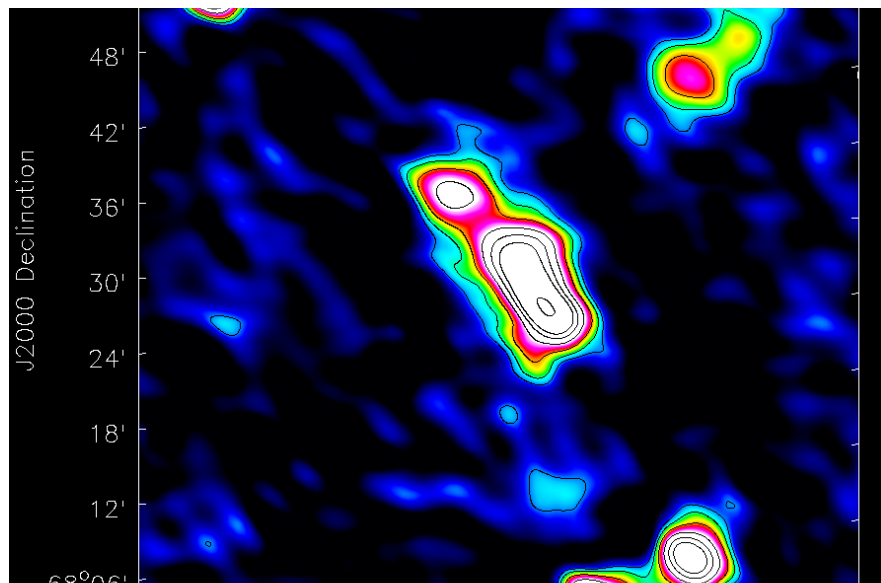


Image noise calculator

is in beta, so please use it with caution. It uses theoretical SEFD values, but these will be updated soon with empirical numbers. For more information about the array and its capabilities please see the [LOFAR webpages at ASTRON](#).

The calculations performed by this tool follow [SKA Memo 113](#) by Nijboer, Pandey-Pommier, & de Bruyn.

Input details

Number of core stations (max 24)

Number of HBA core stations? ☐

Number of remote stations (max 16)

Number of remote stations to 24 tiles? ☐

Number of international stations (max 8)

Frequency

Number of subbands

Bandwidth

Number of channels

Integration time

Number of polarizations? ☐

CALCULATE

LOFAR Image noise calculator

This calculator is in beta, so please use it with caution. It uses theoretical SEFD values, but these will be updated soon with empirical numbers. For more information about the array and its capabilities please see the [LOFAR webpages at ASTRON](#).

The calculations performed by this tool follow [SKA Memo 113](#) by Nijboer, Pandey-Pommier, & de Bruyn.

Your inputs:

- Number of core stations = 24
- Number of remote stations = 9
- Number of international stations = 8
- Frequency = 150 MHz (HBA)
- Time = 3600 sec = 60 min = 1 hr
- Bandwidth = 1 x 180.0537109375 kHz = 0.1800537109375 MHz
- Number of channels = 64 (channel width = 2.8133392333984 kHz)

Extra information:

- Two polarizations are assumed.
- An image weight parameter was not included but *may increase the calculated values* by a factor of 1.3-2.
- No bandwidth losses due to RFI were assumed. This may be unrealistic. Typical band edges are excluded (amounting to keeping 90% of the bandwidth). This is implicit in the subband bandwidths used here.

Image sensitivity = 1.08 mJy/beam

Sensitivity per channel = 8.64 mJy/beam

Use your browser's "Back" button to change input settings.